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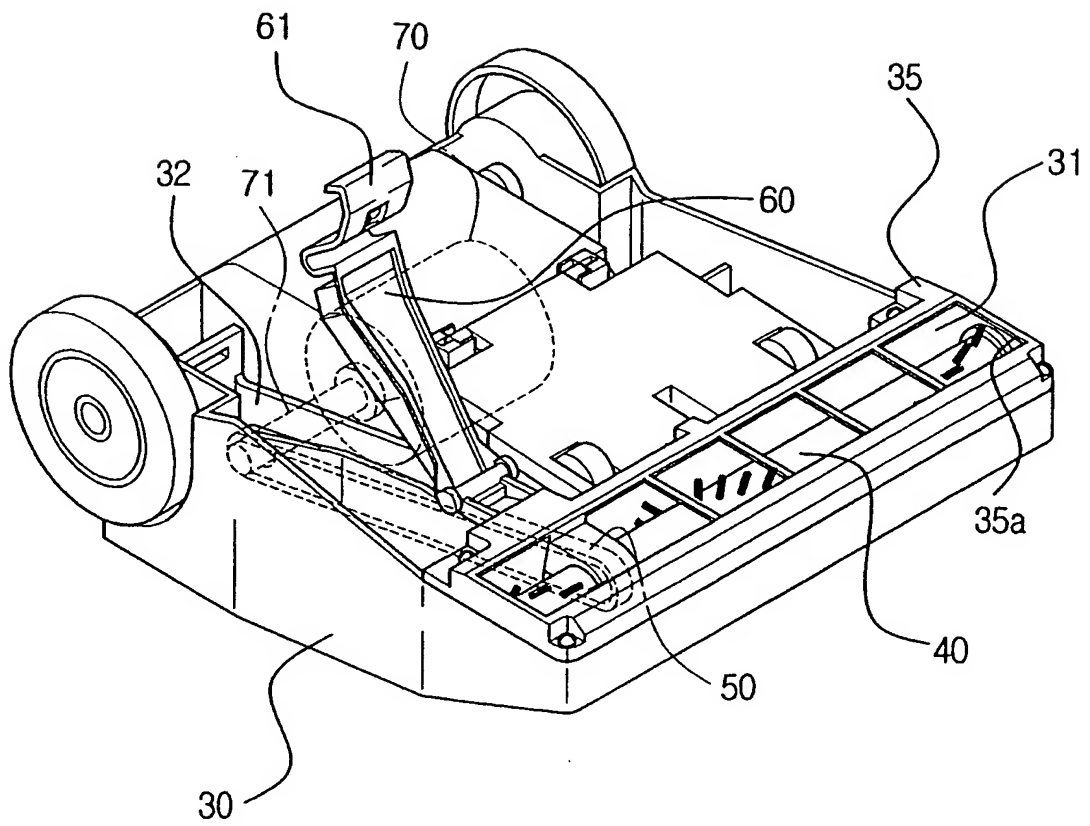
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ABSTRACT OF THE DISCLOSURE

A suction brush rotatably disposed at a cleaner body to move along a cleaning surface for drawing in contaminants from the surface to be cleaned by a suction force generated from a motor driving chamber disposed at a lower portion of the cleaner body

- 5 having a suction brush body, a brush bar rotatably disposed inside the suction brush body, for brushing the contaminants off from the surface to be cleaned, a driving force transmission belt disposed inside the suction brush body for transmitting a rotation force to the brush bar from a motor disposed in the motor driving chamber, and a belt checking cover pivotably disposed at a lower portion of the suction brush body to check the condition and
- 10 contamination of the driving force transmission belt.

FIG. 3





AUSTRALIA

Patents Act 1990

COMPLETE SPECIFICATION

FOR A STANDARD PATENT

ORIGINAL

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Invention Title:	Suction Brush for a Vacuum Cleaner
Details of Basic Application:	Patent Application No. 2002-5769 February 1, 2002 Republic of Korea

The following statement is a full description of this invention, including the best method of performing it known to me/us:

SUCTION BRUSH FOR A VACUUM CLEANER

BACKGROUND OF THE INVENTION

1. Field of the Invention

5 The present invention relates generally to an upright type vacuum cleaner, and more particularly to a suction brush for an upright type vacuum cleaner that draws in air including dust and contaminants, while moving along a surface to be cleaned.

2. Description of the Related Art

As shown in FIG.1, an upright type vacuum cleaner generally comprises a suction
10 brush 20 that is connected to a cleaner body 10 and moves along a surface to be cleaned. The cleaner body 10 is divided into a dust collecting chamber 11 where a dust filter (not shown) is removably disposed and a motor driving chamber 12 where a motor for generating a suction force is disposed. The dust collecting chamber 11 is opened and closed by a cover
13.

15 Additionally, provided in the suction brush 20 is a brush bar 21 for brushing contaminants off the surface to be cleaned, while being exposed at a lower portion of the suction brush 20. The brush bar 21 is rotated by a rotation force that is transmitted from the motor disposed in the motor driving chamber 12 via a driving force transmission belt 23 (shown in phantom).

20 In the above construction, when the motor is driven, a strong suction force is generated at a lower part of the suction brush 20. Due to the suction force, the air, including dust and contaminants entrained therein, is drawn into the dust collecting chamber 11 of the cleaner body 10 from the cleaning surface.

The rotation force is also transmitted from the motor to the brush bar 21 via the

driving force transmission belt 23. The brush bar 21 rotates and brushes the contaminants off from the cleansing surface, thereby removing the contaminants from the surface to be cleaned, whereby the removed contaminants are also drawn into the dust collecting chamber 11.

5 Meanwhile, the drawn air flows into a dust filter (not shown) disposed in the dust collecting chamber 11. At this point, various contaminants entrained in the air are filtered through the dust filter and the air is discharged out through the motor driving chamber 12.

 However, the upright type vacuum cleaner as constructed above has a problem of contamination of the driving force transmission belt 23 where the dust and contaminants are
10 inadvertently transferred from the brush bar 21. Especially, when foreign matter, such as hair or string, is caught in the driving force transmission belt 23, the driving force is not efficiently transmitted to the brush bar 21 and thus can not rotate the brush bar 21. Also, there may be an occasion that the driving force transmission belt 23 is cut during operation. Since it is necessary to check for contamination and the condition of the driving force
15 transmission belt 23, the suction brush 20 has to be separated from the vacuum cleaner. Therefore, an inconvenience arises since the condition of the driving force transmission belt 23 and the motor has to be checked.

SUMMARY OF THE INVENTION

20 The present invention is developed in order to solve the above problems. Accordingly, it is an object of the present invention to provide a suction brush for an upright type vacuum cleaner having an improved construction enabling easy checking of the condition of the driving force transmission belt of the suction brush.

 The above object is accomplished by providing a suction brush for an upright type

vacuum cleaner according to the present invention. According to the present invention, the suction brush is rotatably disposed and attached to a cleaner body to move along a surface to be cleaned, for drawing in contaminants from the surface to be cleaned by a suction force generated from a motor driving chamber disposed at a lower portion of the cleaner body, comprising a suction brush body, a brush bar rotatably disposed inside the suction brush body for brushing the contaminants from the surface to be cleaned, a driving force transmission belt disposed inside the suction brush body for transmitting a rotation force to the brush bar from a motor of the motor driving chamber, and a belt checking cover pivotably disposed at a lower portion of the suction brush body to check for contamination and the condition of the driving force transmission belt.

It is preferable that the belt checking cover is hinged on the brush bar cover disposed at a lower portion of the suction brush body, for covering the brush bar and having an opening port formed therein through which the brush bar may be exposed.

15 BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an exploded schematic perspective view showing a general upright type vacuum cleaner; and

FIGS. 2 and 3 are perspective views showing a suction brush for an upright type vacuum cleaner according to the present invention.

20

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Hereinafter, a suction brush for an upright type vacuum cleaner according to a preferred embodiment of the present invention will be described in greater detail with reference to the accompanying drawings.

Referring to FIGS. 2 and 3, a suction brush for an upright type vacuum cleaner according to a preferred embodiment of the present invention comprises a suction brush body 30, a brush bar 40 disposed in the suction brush body 30, a driving force transmission belt 50 (shown in phantom in FIG. 3), capable of traveling inside the suction brush body 30, and a
5 belt checking cover 60 disposed at a lower portion of the suction brush body 30.

As shown in FIG. 1, the suction brush body 30 is rotatably connected to a lower side of a cleaner body. The lower side of the cleaner body is provided with a motor driving chamber for providing the suction brush body 30 with a suction force, as in a conventional upright type vacuum cleaner, such as that shown in FIG. 1.

10 The brush bar 40 is rotatably disposed in a first mounting section 31 provided in the suction brush body 30. The brush bar 40 brushes contaminants off from a cleaning surface during the rotation. At a lower side of the suction brush body 30 a brush bar cover 35 for covering the brush bar 40 is removably connected. The brush bar cover 35 is provided with an opening port 35a through which the brush bar 40 is outwardly or downwardly exposed, for
15 drawing in contaminants and air therethrough.

The driving force transmission belt 50 travels inside the suction brush body 30 to transmit the driving force to the brush bar 40. The driving force transmission belt 50 travels in a perpendicular direction with respect to the brush bar 40. For this, the suction brush body 30 is provided with a second mounting section 32, perpendicular to the first mounting
20 section 31, for housing the driving force transmission belt 50 therein. The second mounting section 32 communicates with the first mounting section 32 and the motor driving chamber. Accordingly, a shaft 71 of the motor 70 (shown in phantom in FIG. 3) is mounted in the motor driving chamber and extends into the first mounting section 31. The driving force transmission belt 50 is connected to the shaft 71 extended into the second mounting section

32 and the brush bar 40, and travels between the shaft 71 and the second mounting section 32.

The second mounting section 32 is opened and closed by the belt checking cover 60 to expose the driving force transmission belt 50. The belt checking cover 60 easily opens the second mounting section 32 to check on the condition of the driving force transmission belt 50 or the contamination of the second mounting section 32 during the operation of the vacuum cleaner. One end of the belt checking cover 60 is pivotably connected to the brush bar cover 35, as shown. The other end of the belt checking cover 60 is removably connected to and removed from the suction brush body 30 by a so-called "one touch" latching mechanism. For this "one touch" latching mechanism, the belt checking cover 60 has a deformable resilient member 61 formed at the other end thereof and defining a locking hole or a locking protrusion. Inside of the second mounting section 32, there is provided a locking section corresponding to the locking hole or the locking protrusion of the resilient member 61.

According to the construction as described above, usually, the vacuum cleaner is operated with the second mounting section 32 being closed by the belt checking cover 60 as shown in FIG. 2. Then if the brush bar 40 does not completely or smoothly rotate, the second mounting section 32 can be opened simply by opening the belt checking cover 60 for the purpose of checking the driving force transmission belt 50. Accordingly, it is possible to check for the contamination or the condition of the driving force transmission belt 50. Unlike the conventional vacuum cleaner in which a lower portion is required to be separated for a check on the condition of the driving force transmission belt 50, the suction brush according to the present invention has an advantage since the lower portion of the suction brush is not separated for the checking operation.

Meanwhile, although this embodiment described the belt checking cover 60

pivotably connected to the brush bar cover 35, it is just by way of example, and accordingly any proper variations are possible. For example, it is possible that the belt checking cover 60 be directly connected to the suction brush body 30.

According to the suction brush for the upright type vacuum cleaner as constructed
5 above, by providing the suction brush body 30 with the belt checking cover 60 capable of opening and closing the driving force transmission belt 50 for rotating a brush bar 40, the condition or the contamination of the driving force transmission belt 50 is easily checked.

Accordingly, there is an advantage that the user can easily check the condition of the suction brush for proper operation.

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The term "comprising" as used herein is used in the inclusive sense of "including" or "having" and not in the exclusive sense of "consisting only of".

WHAT IS CLAIMED:

1. A suction brush for an upright type vacuum cleaner, disposed at a cleaner body to move along a surface to be cleaned, for drawing in contaminants from the cleaning surface by a suction force generated from a motor driving chamber disposed at a lower portion of the cleaner body, the suction brush comprising:

a suction brush body;

a brush bar rotatably disposed inside the suction brush body, for brushing the contaminants off from the surface to be cleaned;

a driving force transmission belt disposed inside the suction brush body, for transmitting a rotation force to the brush bar from a motor disposed in the motor driving chamber; and

a belt checking cover disposed at a lower portion of the suction brush body to check the condition and contamination of the driving force transmission belt.

2. The suction brush of claim 1, wherein the belt checking cover is pivotably hinged on a brush bar cover disposed at a lower portion of the suction brush body for covering the brush bar and having an opening port formed therein through which the brush bar may be exposed.

3. The suction brush of claim 1, wherein the suction brush is rotatably disposed at the cleaner body.

4. The suction brush of claim 1, wherein the entire length of the driving force transmission belt is accessible when the belt checking cover is removed.

5. The suction brush of claim 1, wherein the drive transmission belt is disposed within a belt mounting section of the cleaner body, separate from a brush mounting section, the belt mounting section being covered by the belt checking cover.

5 6. A suction brush for an upright type vacuum cleaner, said brush being substantially as herein described with reference to Figs. 2 and 3.

7. A method of checking a driving force transmission belt of a vacuum cleaner, said method being substantially as herein described with reference to Figs. 2
10 and 3.

Dated this 21st day of May 2002

15

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By

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Patent Attorneys for the Applicant

FIG. 1

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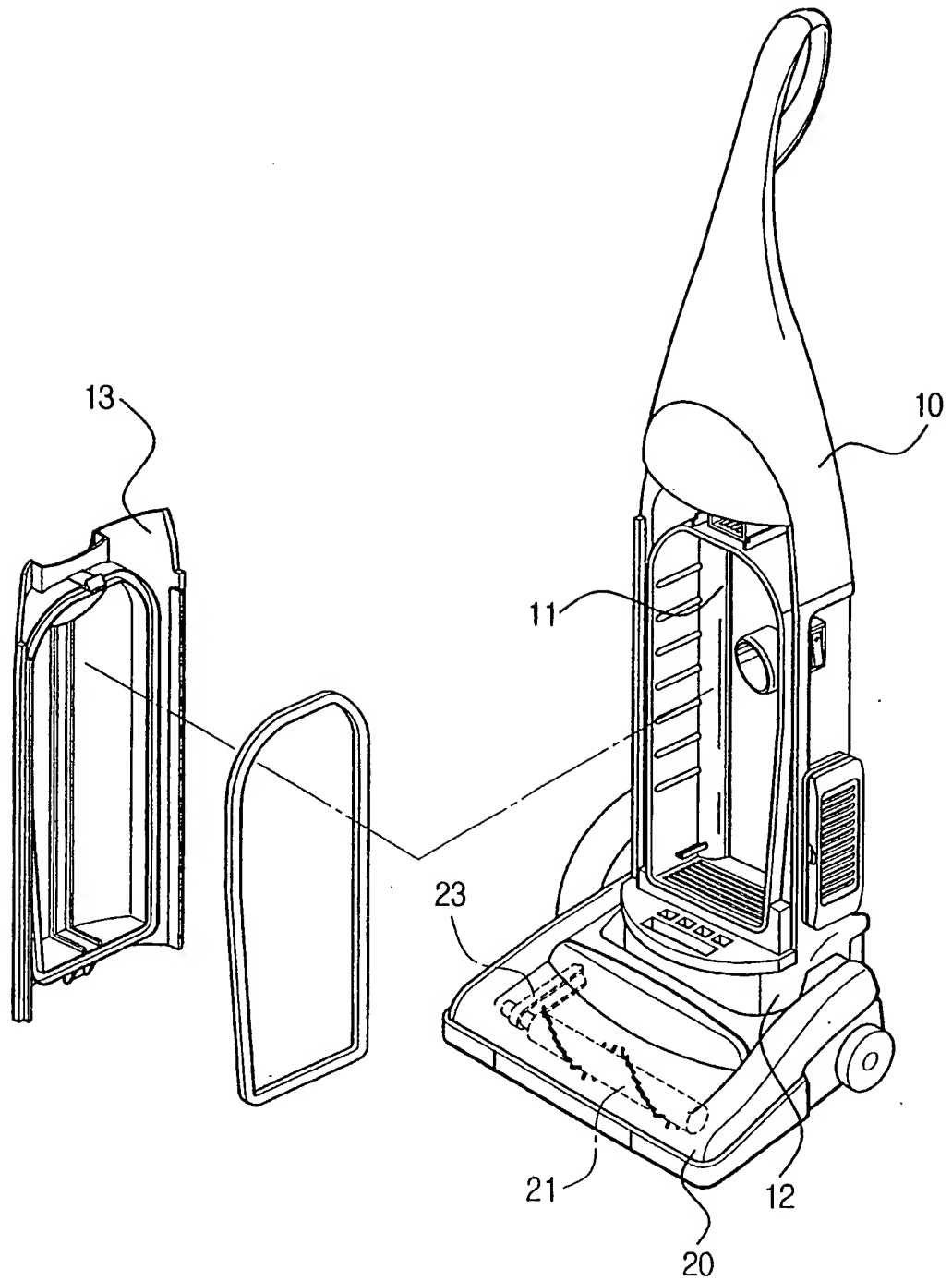


FIG. 2

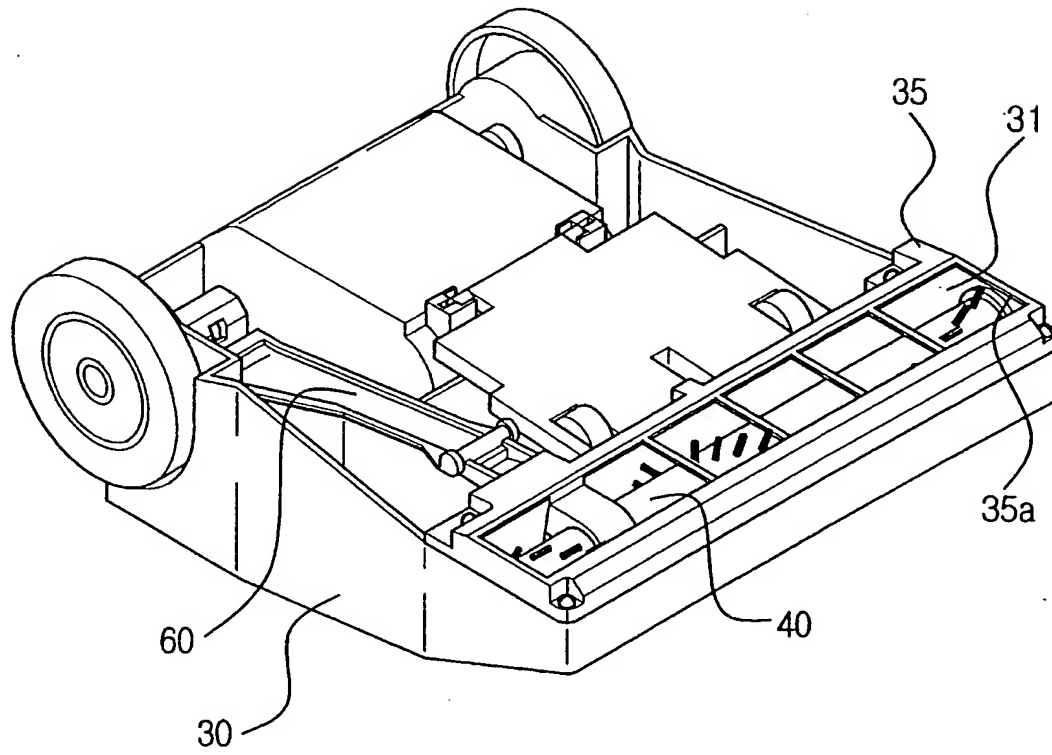
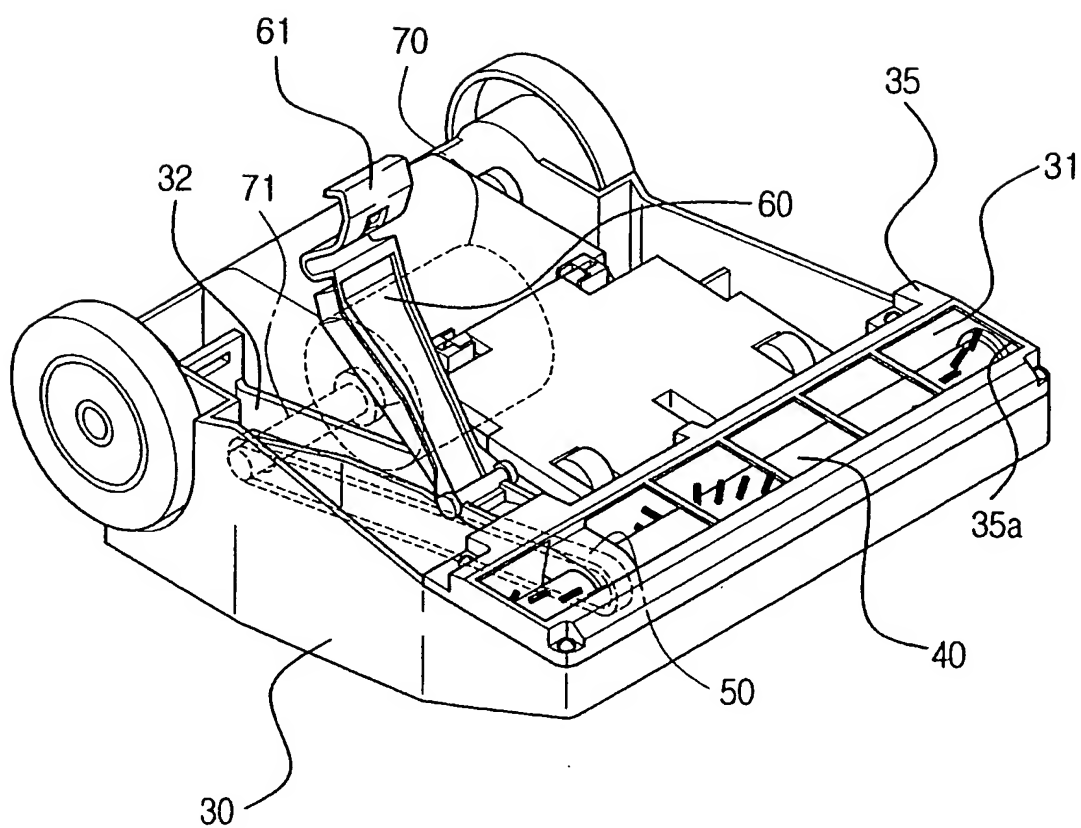


FIG. 3



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